

REMARKS

This Amendment is in response to the Final Action of July 19, 2010 in which claims 1, 2 and 4-12 were rejected and claim 3 objected to.

This Final Office Action indicates that the Examiner strongly believes that the LOAD 24 of Fig. 2 is the same as the claimed invention and substantially repeats the text of the previous Office Action.

Applicants definitely disagree with the 103 rejection and believe that the pending claims are not anticipated by the cited prior art.

The Examiner's interpretation of the alleged AAPA is considered incorrect. Figure 2, item 24 merely presents "a mixer load 24." There is nothing in the background section of the description to indicate that an active mixer load would be considered part of the prior art. On the contrary, the "active mixer load" –feature is disclosed for the first time in the summary of the invention, for instance par. [0020] of U.S. 2008/0305759 corresponding to the second paragraph after the Summary of the Invention heading on page 6 of the specification. Challenges in adopting an active mixer load are further elaborated in par. [0024] corresponding to the last paragraph on page 7 of the specification.

The description of Fig. 2 is in the background section and is clearly describes state of the art. The first full paragraph on page 5 of the specification, corresponding to published paragraph [0016], for instance, elaborates the structure of the prior art mixer load:

"A conventional direct conversion receiver comprises a **passive load for the mixer**, which is composed of a resistor and a capacitor to provide a suitable signal gain and a first order attenuation for interferences. Such a **passive mixer load** is difficult to design for a desired gain, a desired noise and a desired linearity, as these factors are all linked together through the bias current of the mixing component and the load impedance. A conventional mixer structure will therefore have considerable noise and linearity problems in modern CMOS architectures operating with a low supply voltage."

Applicants are wondering if this is an interpretation issue. Maybe the Examiner is incorrectly interpreting the claim elements in a structural way "active mixer" + "any

type of load”? From Applicants’ point of view, the broadest reasonable interpretation is that there are two types of mixer loads, passive and active, and the claim should be construed to mean “mixer” + “active load”. A person of ordinary skill in the RF designer art understands that passive loads are essentially comprised of passive components, whereas active loads comprise active devices such as transistors. Nevertheless, to avoid such an incorrect interpretation, the word “mixer” is cancelled from the phrase “active mixer load.” This amendment is made to try to totally avoid such an incorrect interpretation and could not have been made earlier because Applicants could not have anticipated such an interpretation. No further search or substantial consideration is necessary.

Regarding the *Darabl* –reference, the rejection seems to be substantially the same and, in Applicants’ view, is without merit.

First of all, *Darabl* fails to disclose a mixer with active load. The figures of *Darabl* do not show the mixer load circuit, they only show a “differential mixer output 138” which would be likely connected to a load circuit. Regarding the “modulator arranged for modulating a flicker noise produced by said active mixer” –feature, *Darabl* is silent. *Darabl*, col. 2, line 60 – col. 3, line 4:

“The mixers further include at least one auxiliary current module that is coupled to provide a current to the second transconductance module during switching of at least a portion of the first transconductance module. Stated differently, the auxiliary current module provides a current that is sourced into the second transconductance module at or near a zero-crossing of the signal received by the first transconductance module. As such, the current that is sourced by the at least one auxiliary current module reduces or eliminates any flicker noise that would otherwise be produced by the first transconductance module at or near a zero-crossing.”

Therefore, the solution by *Darabl* is an attempt to eliminate flicker noise caused by the “first transconductance module.” The first transconductance module is considered equivalent to the mixer core i.e. the transistors mixing an input signal with a local oscillator signal (this happens inside the block 33 of our application).

Darabl does not “modulate flicker noise away from the signal band of a signal input.” *Darabl* adopts a signal crossing detector 143, which is arranged to inject an amount of additional DC bias current for the first transconductance module apparently

at or near a zero-crossing of a signal received by the first transconductance module. It is unclear which signal is detected by element 143. The flicker noise produced by a mixer load is considered to be not related to the flicker noise produced by the first transconductance module, i.e. the mixer core itself. The purpose of the *Darabl* solution is clearly different.

Reconsideration and allowance is requested.

The objections and rejections of the Office Action of July 19, 2010, having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested and passage of claims 1 and 3-12 to issue is earnestly solicited.

Respectfully submitted,

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